

(12) UK Patent Application (19) GB (11) 2 313 143 (13) A

(43) Date of A Publication 19.11.1997

(21) Application No 9709614.3

(22) Date of Filing 12.05.1997

(30) Priority Data

(31) 9609929

(32) 13.05.1996

(33) GB

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(51) INT CL⁶

E06B 9/174 9/50 9/90

(52) UK CL (Edition O)

E1J JDP JEX

(56) Documents Cited

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(58) Field of Search

UK CL (Edition O) E1J JDP JDT JDW JEX JFF

INT CL⁶ E06B 9/174 9/50 9/90

Online: World Patents Index, EDOC, JAPIO

(54) Roller blind mounting

(57) A roller blind comprises a roller 20, mounted on a pair of brackets (14, 16, figure 1) through a pair of end fittings 30, (50, figure 3). At least one of the end fittings has a spigot (54, figure 3) which can be compressed axially of the roller against spring force to enable the roller to be introduced between the brackets. Means operable to prevent compression of the fitting following installation comprises, singly or in combination, a tongue 40 carried on a first end fitting 30 which has a transversely extending cut-away part 42 so as to resist subsequent axial movement of the tongue or a collar 100 which surrounds the spigot (54, figure 3), the collar 100 being secured on the spigot in a position adjacent the roller to prevent axial movement with respect to the spigot.

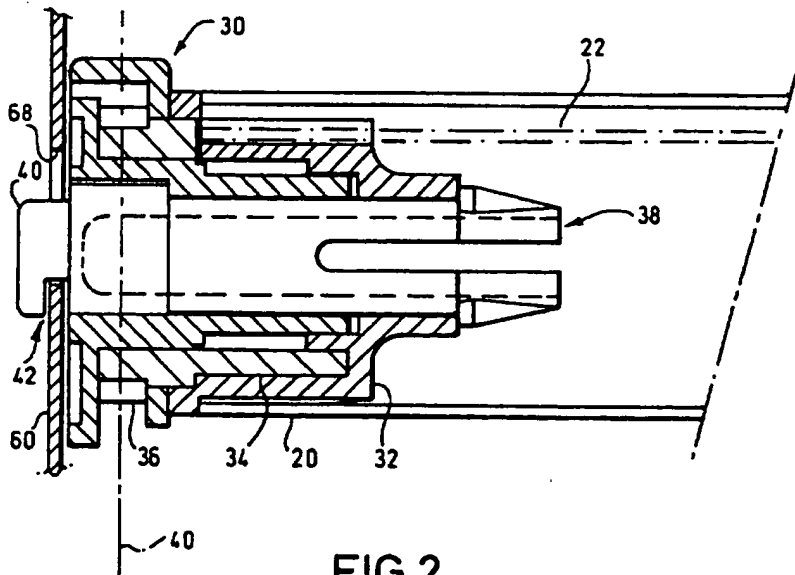


FIG.2.

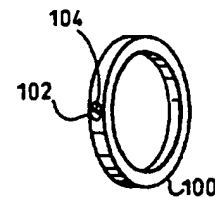


FIG.6.

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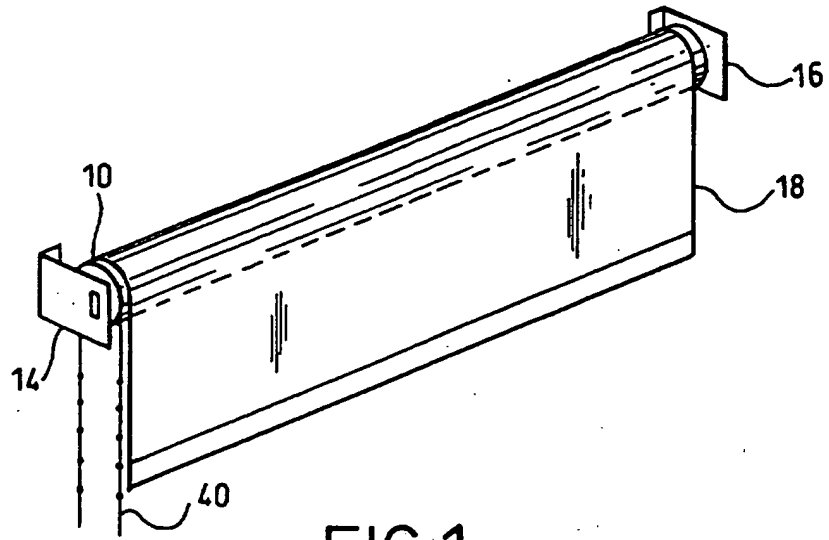


FIG.1.

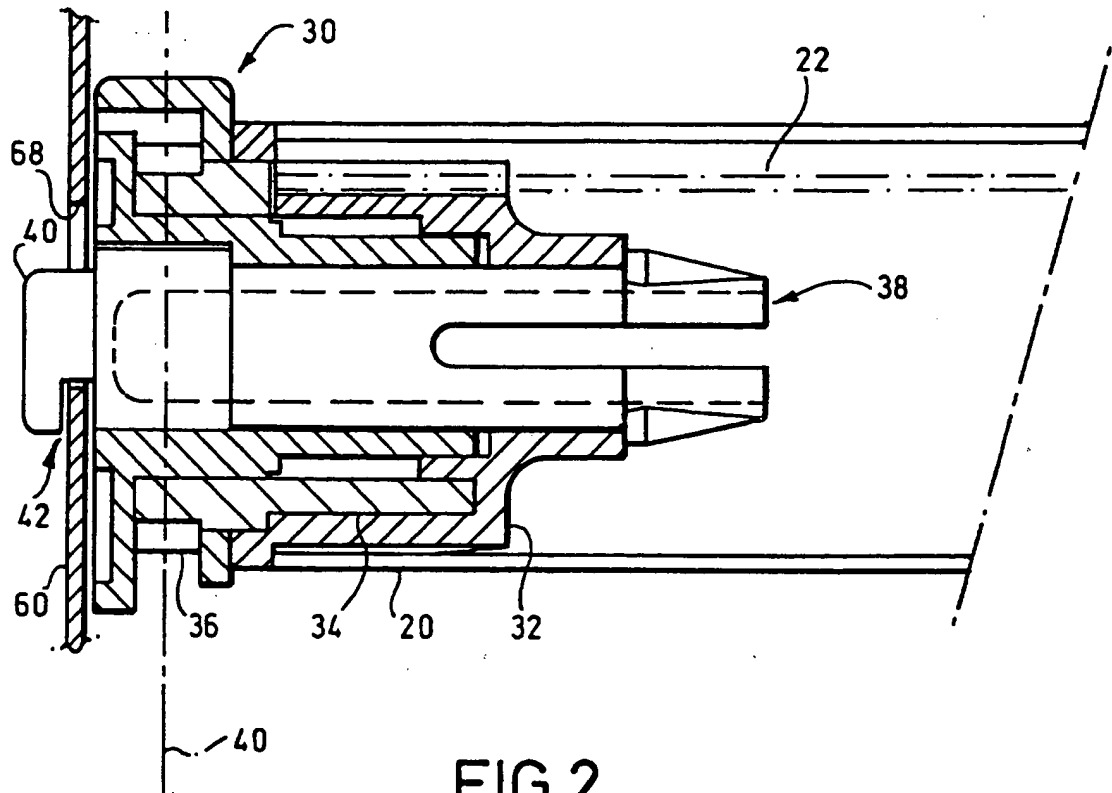


FIG.2.

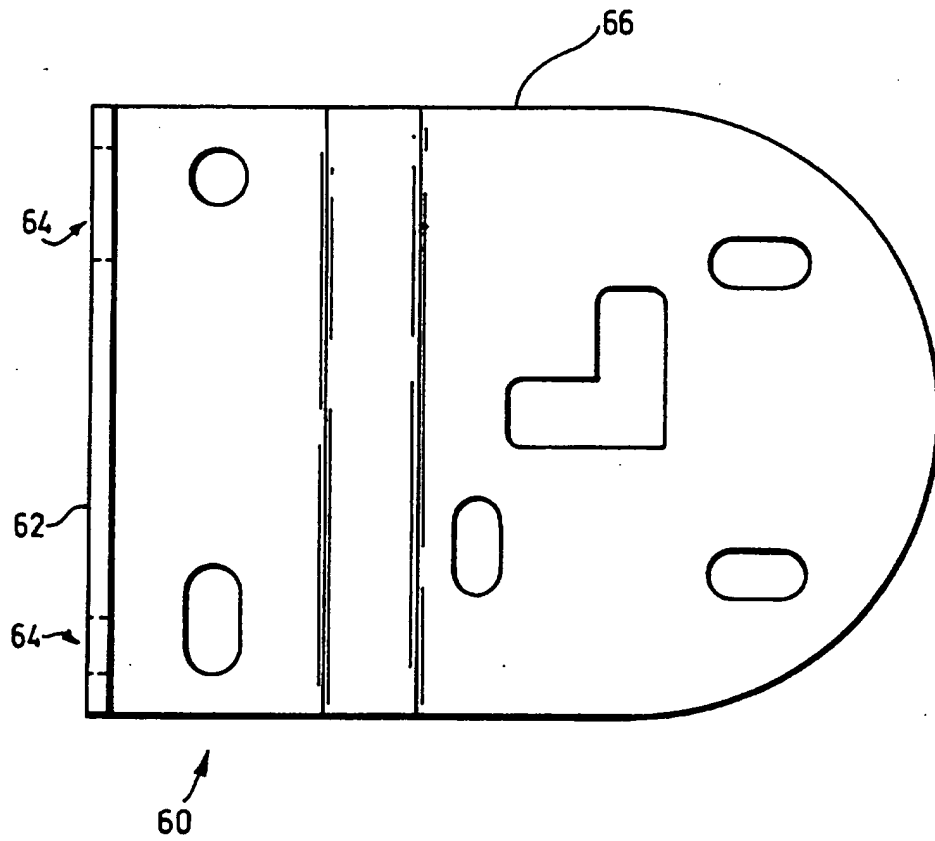


FIG.4.

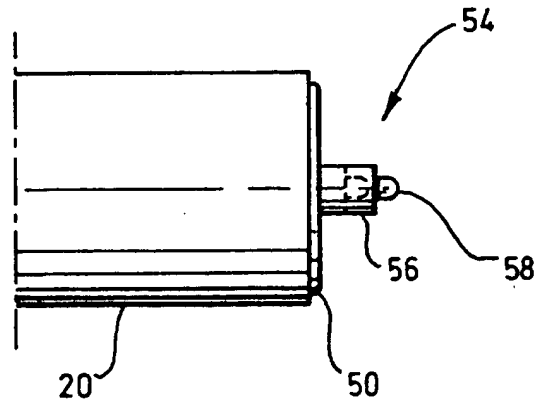


FIG. 3.

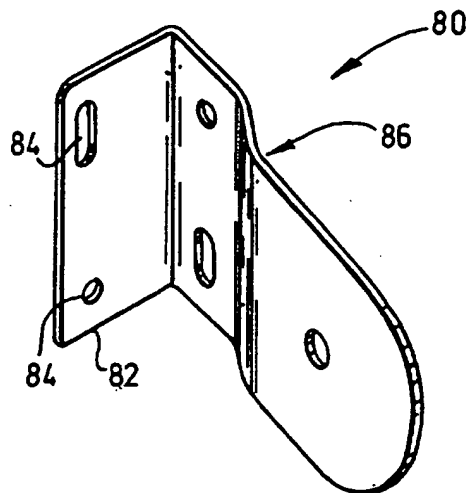


FIG. 5.

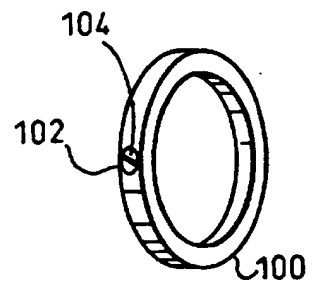


FIG. 6.

ROLLER BLIND

The present invention relates to roller blinds.

5 A roller blind typically comprises a sheet of flexible material attached to a cylindrical roller. The roller is carried on brackets such that it can be rotated under the control of a user. In this way, the flexible sheet can be rolled around the roller in order that it
10 may selectively be extended from it to cover an opening, or withdrawn to expose the opening. Rotation of the roller may be accomplished, for example, by a user pulling on an operating cord which causes the roller to rotate, or under the action of a spring internal to the
15 roller. In the latter case, rotation is typically controlled by the user pulling on a cord attached to the flexible sheet.

 The roller of a roller blind is typically mounted
20 between a pair of brackets, the roller having a fitting at each of its ends adapted to engage a respective bracket. One or both fitting is adapted to be contractible axially of the roller against spring force, thereby to reduce the total length of the roller, such
25 that it may be introduced between the brackets. Once released, the or each fitting extends, such that the roller becomes firmly secured between the brackets.

 It has been found that this system for mounting the
30 roller is very satisfactory for many installations.

However, if the user pulls the operating cord or the cord attached to the flexible sheet (as the case may be) to one side or the other, this can apply a sufficient axial force to the roller to cause compression of one of its
5 end fittings sufficient to allow the roller to become detached from its brackets. Clearly, this could be dangerous for the user.

The present invention is intended to provide a
10 roller blind which can be installed in a manner similar to that for a conventional roller blind yet which does not suffer from the above described disadvantage.

According to the invention there is provided a
15 roller blind comprising a roller, a sheet of flexible material secured to the roller, and a pair of brackets for supporting the roller, the roller having a pair of end fittings for engaging the brackets such that the roller is rotatably supported by them, wherein at least
20 one of the end fittings has a part which can be compressed axially of the roller against a resilient biasing force to enable the roller to be introduced between the brackets, and there being provided locking means operable to prevent compression of the fitting
25 following installation of the roller between the brackets.

By preventing compression of the fitting, the roller is more securely retained in position on the brackets,
30 and inadvertent removal from the brackets is resisted.

The locking means may operate directly in the compressible fitting to resist compression of it. Alternatively, or additionally, it may operate to resist axial movement of the roller by acting on a remote part
5 of it. As a particular example, an opposite end fitting may be constrained from movement away from an associated bracket.

Embodiments of the invention will now be described
10 in detail, by way of example, with reference to the accompanying drawings in which:

Figure 1 is a perspective schematic view of a blind being a first embodiment of the invention;

Figure 2 is a detailed sectional view of a first end
15 fitting of the blind of Figure 1;

Figure 3 shows the opposite end portion of the roller and a second end fitting;

Figure 4 is a side view of a bracket for supporting the first end fitting of the roller;

20 Figure 5 is a perspective view of a bracket for supporting the second end fitting of the roller;

Figure 6 is an alternative or additional securing device for a blind embodying the invention.

25 With reference to the drawings, a roller blind embodying the invention comprises a roller 10 carried between first and second brackets 14,16. A flexible sheet element 18 of fabric material (which is typically stiffened) is attached to the roller 10.

The roller 10 comprises a length of tube 20, typically of aluminium, steel or plastics material. The tube 20 is generally cylindrical, with, in the present embodiment, a groove 22 extending along its length into
5 which the sheet element 18 can be fixed by conventional means. Thus, rotation of the tube 20 about a longitudinal axis causes the sheet element 18 to be rolled upon or unrolled from the tube 20.

10 A first end fitting 30 is disposed at a first end of the tube 20. The first end fitting 30 comprises a plug part 32 which is a close push fit into the end of the tube 20, and which has a keyway into which the groove 22 is received to prevent rotation of the plug part 32
15 within the tube 20.

An insert 34 fits within the plug part 32. The insert comprises a toothed wheel section 36 which is adapted to cooperate with a cord 40 on which is carried
20 spaced bead-like formations, such that linear motion of the cord 40 causes the toothed wheel section 36, and thence the tube 20, to rotate.

The insert 34 and the plug part 32 have an axial
25 bore. A shaft member 38 extends through the bore, such that the insert 34 and the plug part 32 can rotate about it. A tongue 40 projects from the shaft member 38. The tongue 40 is generally rectangular in section. A transverse rectangular portion of the tongue 40 is cut
30 away at 42.

A second end fitting 50, shown in Figure 3, is provided at the opposite end of the tube 20. The second end fitting 50 has a body which is a push fit into the tube 20. A spigot 54 projects axially from the body 50. 5 The spigot 54 has a larger diameter portion 56 adjacent the body, and a smaller diameter portion 58 remote from the body 50.

The spigot 54 can be displaced axially with respect 10 to the body 50. In a normal condition, the spigot 54 is as shown in solid lines in Figure 3. It is displaceable against spring force, to the position shown in phantom.

The roller 10 is mounted between first and second 15 brackets 60,80 shown in Figures 4 and 5. Each bracket 60,80 has a mounting portion 62,82 having through holes 64,84 through which screws or other fasteners can pass in order to secure the bracket to, for example, a wall or a ceiling. A projecting portion 66,86 projects at right 20 angles from each mounting portion 64,84. Each projecting portion has formations adapted to cooperate with a respect one of the end fittings 30,50 of the roller 10. In the case of the first bracket 60, the formations comprise an L-shaped slot 68 being direction such that 25 the tongue 40 of the first end fitting 30 can pass through it in two alternative configurations disposed at 90° to one another. In the case of the second bracket 80, the formations comprise a through hole 88 through which the smaller diameter portion 58 (but not the large 30 diameter portion 56) of the spigot 54 of the second end

fitting 50 can pass.

The brackets 60,80 are secured spaced apart by a distance less than the total length of the roller 10 measured from the end of the spigot 54, when fully extended, to the furthest part of the tongue 40. However, the brackets are sufficiently far apart to permit installation of the blind, as will be described below.

10

The blind is installed by inserting the smaller diameter portion 58 of the spigot 54 through the hole 88 in the second bracket 80. The roller 10 is then urged towards the second bracket to cause the spigot 54 to be urged inwardly. The tongue 40 is then aligned with the slot 68 of the first bracket 60, such that the tongue 40 is substantially vertical, with the cut-away part 42 lower-most. The roller 10 is then allowed to move towards the first bracket under the action of the spring loading of the spigot.

20

The spigot 54 will expand as fully as the brackets 60, 80 permit, this normally being less than fully expanded. As the spigot expands, its tongue 40 is then displaced transversely, such that a portion of the bracket 60 adjacent the slot 68 enters the cut-away part 42 of the tongue 40. The tongue 40 is thus, effectively, locked onto the bracket 60, such that axial movement of the roller is prevented. As will be understood, the roller 10 cannot be dislodged accidentally from this

30

condition, thus avoiding the risk of its becoming dislodged.

With reference to Figure 6, a further locking device
5 may be provided to act in place of or additionally to the
arrangement described above. The further locating device
comprises a metal ring 100 which has an internal diameter
slightly greater than the external diameter of the larger
diameter portion 56 of the spigot 54. The ring 100 has
10 a radial through hole 102 in which is located a grub
screw 104.

In use, the grub screw 104 is positioned such that
it does not substantially project into the ring. The
15 ring 100 is then placed on the spigot 54. Once the ring
100 is in place, the blind can be fitted in the normal
manner. The roller itself may be constructed as
described above, or otherwise in accordance with the
invention, or it may be of conventional construction.
20 The ring 100 is then pushed along the spigot 54 until it
makes contact with the roller 10 remote from the bracket
80. The grub screw 104 is then tightened to lock the
ring 100 in place. Depression of the spigot 54 is thus
prevented, so preventing accidental removal of the blind
25 from its brackets 60,80.

CLAIMS

1. A roller blind comprising a roller, a sheet of flexible material secured to the roller, and a pair of brackets for supporting the roller, the roller having a pair of end fittings for engaging the brackets such that the roller is rotatably supported by them, wherein at least one of the end fittings has a projecting part which can be displaced axially of the roller against a resilient biasing force to enable the roller to be introduced between the brackets, and there being provided locking means operable to resist displacement of the projecting part following installation of the roller between the brackets.
2. A roller blind according to claim 1 in which a locking means operates to resist axial movement of the roller by acting on a part of the blind remote from the projecting part.
3. A roller blind according to claim 2 in which the locking means is constrained against movement away from an associated bracket.
4. A roller blind according to claim 3 in which the locking means comprises, in combination, a tongue carried on a first end fitting has a transversely extending cut-away part, whereby, on the tongue entering a slot on the corresponding bracket the material of the bracket can enter the cut-away part so as to resist subsequent axial

movement of the tongue.

5. A roller blind according to any preceding claim in which the said at least one of the fittings comprises a body to from which projects a spigot, the spigot being displaceable axially into the roller against the action of a resilient biasing component.
6. A roller blind according to claim 5 in which the resilient biasing component comprises a helical compression spring.
7. A roller blind according to claim 5 or claim 6 in which a locking means operates directly on the compressible fitting to resist compression of it.
8. A roller blind according to claim 7 which comprises the locking means comprises a collar which surrounds the spigot, the collar having selectively configurable to be slidable with respect to the spigot or to be secured against axial movement with respect to the spigot.
9. A roller blind according to claim 8 in which a screw is disposed in a radial bore of the collar, the screw being drivable radially inwardly to engage the spigot, so as to resist axial movement of the spigot.
10. A roller blind substantially as herein described with reference to the drawings.



Application No: GB 9709614.3
Claims searched: 1-10

Examiner: John Rowlatt
Date of search: 18 July 1997

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK CI (Ed.O): E1J: JDP, JDT, JDW, JEX, JFF.

Int CI (Ed.6): E06B: 9/174, 9/50, 9/90.

Other: Online: World Patents Index, EDOC, JAPIO

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
Y	GB2110280A (JONGSIK WON) - see figure 1, collar 4 and screw 11.	1-3 & 5-9
Y	GB1464547A (ROTALAC) - see spring-loaded retractable pins 18.	1-3 & 5-9
Y	EP0717166A1 (MOTTURA) - see figures 2 & 5, circlip 24 on spindle 22.	1-3 & 5-9
Y	EP0187685A2 (TRATSAERT) - see figure 1, head 20 in channel 21, screw 9, and collar 10 with screw 11.	1-3 & 5-9
Y	EP0046949A2 (TOSO KK) - see screw 19 [equivalent US4487245].	1-3 & 5-9
Y	EP0046948A2 (TOSO KK) - see spring-loaded pin 4, 5 in figure 1.	1-3 & 5-9

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent documents published on or after, but with priority date earlier than, the filing date of this application.